

CLAIM AMENDMENTS

Claims 1-244 (cancelled)

245. (currently amended) A composition comprising a primary nucleic acid component which upon introduction into a eukaryotic cell produces a secondary nucleic acid component which ~~is capable of producing~~ produces a nucleic acid product, or a tertiary nucleic acid component, or both, in said eukaryotic cell, wherein said primary nucleic acid component is not obtained with said secondary or tertiary component or said nucleic acid product.

Claims 246 (cancelled)

247. (currently amended) The composition of claim 245, wherein said primary nucleic acid component is selected from the group consisting of a nucleic acid, a nucleic acid construct, a nucleic acid conjugate, ~~a virus, a viral fragment, a viral vector, a viroid~~ vector, a phage vector, ~~a plasmid, a plasmid vector, a bacterial fragment~~ and a combination of the foregoing.

248. (previously added) The composition of claim 245, wherein said primary nucleic acid component is single-stranded, double-stranded or partially double-stranded.

249. (previously amended) The composition of claim 245, wherein said primary nucleic acid component is selected from the group consisting of DNA, RNA and nucleic acid analogs, and a combination thereof.

250. (previously amended) The composition of claim 249, wherein said DNA, RNA or both are modified.

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251. (previously amended) The composition of claim 245, wherein said secondary nucleic acid component or said tertiary nucleic acid component is selected from the group consisting of DNA, RNA, a DNA-RNA hybrid, a DNA-RNA chimera and a combination of the foregoing.

252. (previously added) The composition of claim 245, further comprising a signal processing sequence.

253. (previously amended) The composition of claim 252, wherein said signal processing sequence is selected from the group consisting of a promoter, an initiator, a terminator, an intron, a cellular localization element and a combination of the foregoing.

254. (previously amended) The composition of claim 252, wherein said signal processing sequence is contained in an element selected from the group consisting of said primary nucleic acid component, said secondary nucleic acid component, said nucleic acid product, said tertiary nucleic acid component and a combination of the foregoing.

255. (previously added) The composition of claim 245, wherein said nucleic acid product is single-stranded.

256. (previously amended) The composition of claim 245, wherein said nucleic acid product is selected from the group consisting of antisense RNA, antisense DNA, a ribozyme, a protein binding nucleic acid sequence and a combination of the foregoing.

257. (previously added) The composition of claim 256, wherein said protein binding nucleic acid sequence comprises a decoy that binds a protein required for viral assembly or viral replication.

258. (previously added) The composition of claim 245, wherein said component or nucleic acid production is mediated by a vector.

259. (previously amended) The composition of claim 258, wherein said vector is selected from the group consisting of a viral vector, a phage vector, a plasmid vector, and a combination thereof.

260. (currently amended) A eukaryotic cell containing the composition of claim 245.

Claims 261 (cancelled)

262. (previously added) The cell of claim 260, wherein said composition has been introduced *ex vivo* into said cell.

263. (previously added) The cell of claim 260, wherein said composition has been introduced *in vivo* into said cell.

264. (previously added) A secondary or tertiary nucleic acid component or nucleic acid product produced from the composition of claim 245.

265. (currently amended) A composition of matter comprising a nucleic acid component which when present in a cell produces a non-natural nucleic acid product, which product comprises (i) ~~a cellular compartment localizing entity~~, (i) a nuclear localization sequence comprising a portion of snRNA, said snRNA

comprising sequences for at least two stem loops present at the 3' end of native snRNA, and a reimportation signal and (ii) a nucleic acid sequence of interest.

Claims 266 and 267 (cancelled)

268. (previously amended) The composition of claim 265, wherein said nucleic acid sequence of interest (ii) is selected from the group consisting of DNA, RNA, a DNA-RNA hybrid, a DNA-RNA chimera, and a combination of the foregoing.

Claims 269 (cancelled)

270. (currently amended) The composition of claim ~~269~~265, wherein said nuclear localized ~~RNA comprises a snRNA~~sequence comprises a portion of U1 RNA comprising C and D loops.

271. (currently amended) The composition of claim 270, wherein said snRNA comprises U1 sequences, or U2 sequences, or both.

272. (previously added) The composition of claim 265, wherein said non-natural nucleic acid product is single-stranded.

273. (previously amended) The composition of claim 265, wherein said non-natural nucleic acid product is selected from the group consisting of antisense RNA, antisense DNA, a ribozyme, a protein binding nucleic acid sequence and a combination of the foregoing.

274. (previously added) The composition of claim 273, wherein said protein binding nucleic acid sequence comprises a decoy that binds a protein required for a viral assembly or viral replication.

Claims 275-277 (cancelled)

278. (currently amended) The composition of claim 265, wherein said nucleic acid component is selected from the group consisting of a nucleic acid, a nucleic acid construct, a nucleic acid conjugate, a virus, a viral fragment, a viral vector, a viroid vector, a phage, a phage vector, a plasmid, a plasmid vector and a combination of the foregoing.

279. (currently amended) The composition of claim 278, wherein said nucleic acid is selected from the group consisting of DNA, RNA, a DNA-RNA hybrid, a DNA-RNA chimera and a combination of the foregoing.

280. (previously added) The composition of claim 278, wherein said nucleic acid is modified.

Claim 281 (cancelled)

282. (previously added) The composition of claim 265, wherein the production of said nucleic acid product is mediated by a vector.

283. (previously amended) The composition of claim 282, wherein said vector is selected from a viral vector, a phage vector, a plasmid vector and a combination thereof.

284. (previously added) A cell containing the composition of claim 265.

Claims 285 (cancelled)

286. (previously added) The cell of claim 284, wherein said composition has been introduced *ex vivo* into said cell.

287. (previously added) The cell of claim 284, wherein said composition has been introduced *in vivo* into said cell.

288. (previously added) A biological system containing the cell of claim 284.

289. (previously amended) The biological system of claim 288, wherein said system is selected from the group consisting of an organism, an organ, a tissue, a culture and a combination thereof.

290. (currently amended) A process for localizing a nucleic acid product in a eukaryotic cell, comprising:

~~(a) providing a composition of matter comprising a nucleic acid component which when present in a cell produces a non-natural nucleic acid product, which product comprises:~~

~~_____ (i) a portion of a localizing entity, and~~

~~_____ (ii) a nucleic acid sequence of interest;~~the composition of claim 265 and

(b) introducing said composition into said cell or into a biological system containing said cell.

Claims 291 (cancelled)

292.(currently amended) The process of claim 290, wherein said ~~nucleic acid product comprises antisense RNA or antisense DNA and said portion of a localizing entity (1) comprises a nuclear localization signalling sequence composition produces a nucleic acid product comprising a~~ sequence of interest selected from the group consisting of sense RNA, sense DNA, antisense RNA and antisense DNA.

Claims 293-295 (cancelled)

296. (currently amended) The process of claim ~~295, wherein said 290, wherein~~ the composition ~~snRNA~~ comprises U1 or U2 or both.

297. (previously added) The process of claim 290, wherein said composition is introduced *ex vivo* into said cell or into a biological system containing said cell.

298. (previously added) The process of claim 290, wherein said composition is introduced *in vivo* into said cell or into a biological system containing said cell.

299.(currently amended) A nucleic acid component which upon introduction into a eukaryotic cell ~~is capable of producing produces~~ more than one specific nucleic acid sequence, each such specific sequence so produced being substantially nonhomologous with each other and being either complementary with a specific portion of a one or more single-stranded nucleic acids of interest in a cell or ~~capable of binding~~ binds to a specific protein of interest in a cell.

300. (previously added) The nucleic acid component of claim 299, wherein said single stranded nucleic acids of interest are part of the same polynucleotide sequence or part of different polynucleotide sequences.

301. (previously added) The nucleic acid component of claim 299, wherein said single stranded nucleic acids of interest comprise a viral sequence.

302. (currently amended) The nucleic acid component of claim 299, wherein said component is ~~derived or selected from~~selected from the group consisting of a nucleic acid, a nucleic acid construct, a nucleic acid conjugate, a virus, a viral fragment, a viral vector, a viroid vector, a phage, a phage vector, a plasmid, a plasmid vector, a bacterium, a bacterial fragment, and a combination of the foregoing.

303.(previously amended) The nucleic acid component of claim 299, wherein said nucleic acid is selected from DNA, RNA, nucleic acid analogs and a combination thereof.

304. (previously added) The nucleic acid component of claim 303, wherein said DNA or RNA is modified.

305. (previously added) The nucleic acid component of claim 299, comprising either more than one promoter or more than one initiator, or both.

306.(currently amended) The nucleic acid component of claim 299, wherein each said specific nucleic acid sequence product is ~~capable of being produced~~ independently from either different promoters, different initiators, or a combination of both.

307. (previously added) The nucleic acid component of claim 299, wherein said specific nucleic acid sequence products are either complementary to a viral or cellular RNA, or bind to a viral or cellular protein, or a combination of the foregoing

308.(currently amended) The nucleic acid component of claim 307, wherein said complementary specific nucleic acid sequence products ~~are capable of acting~~act as antisense.

309.(currently amended)The nucleic acid component of claim ~~308~~307, wherein said ~~viral or~~ cellular protein comprises a localizing protein or a decoy protein.

310.(previously added) The nucleic acid component of claim 309, wherein said localizing protein comprises a nuclear localizing protein or a cytoplasmic localizing protein.

311.(previously added) The nucleic acid component of claim 309, wherein said decoy protein binds a protein required for viral assembly or viral replication.

312. (previously amended) The nucleic acid component of claim 299, wherein 312.said specific nucleic acid sequence products are selected from antisense RNA, antisense DNA, a ribozyme, a protein binding nucleic acid sequence, and a combination of the foregoing.

313.(previously added) The nucleic acid component of claim 299, further comprising a means for delivering said component to a cell containing the nucleic acid of interest or the specific protein of interest.

Claims 314-316 (cancelled)

317.(previously added) The composition of claim 245, wherein said secondary nucleic acid is DNA and said tertiary nucleic acid is RNA.

318. (new) A process for introducing a nucleic acid product into a cell comprising

- (a) providing the composition of claim 245 and
- (b) administering said composition.

319.(new) The method according to claim 318 wherein said composition is administered *ex vivo*.

320. (new) The method according to claim 318, wherein said composition is administered *in vivo*.

321. (new) A process for introducing a plurality of nucleic acid sequences into a cell comprising:

- (a) providing the nucleic acid component of claim 299 and
- (b) administering said component.

322. (new) The method according to claim 321, wherein said component is administered *ex vivo*.

323. (new) The method according to claim 318, wherein said component is administered *in vivo*.